Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Matthew J. Strickler
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David K. Paylor
Director
(804) 698-4000

Craig R. Nicol
Regional Director

February 14, 2020

RE: Modification of Permit for Dominion Yorktown Power Station Ash Landfill, Permit #457 Yorktown, Virginia

Dear Commentor:

The Department of Environmental Quality (DEQ) Tidewater Regional Office (TRO), on October 23, 2019, published its tentative approval for a major permit modification to update the Yorktown Power Station Ash Landfill (Landfill) permit to include: operating criteria, groundwater monitoring, closure and post-closure care, and recordkeeping, notification, and internet posting requirements applicable to the facility in accordance with the United States Environmental Protection Agency 2015 Final Rule on the Disposal of Coal Combustion Residuals, 40 CFR Part 257 Subpart D (EPA CCR Rule).

Prior to publishing the tentative approval and initiating the formal public comment period, DEQ hosted an informational meeting related to this Landfill on December 6, 2018. During this meeting, DEQ provided an overview of status and requirements regarding the Landfill, and staff answered questions one-on-one with interested citizens after the presentations. DEQ also identified that the permit would be modified in the future to incorporate the requirements of the EPA CCR Rule as proposed in this permitting action. In addition, DEQ posted the proposed permit modification and accompanying fact sheet regarding this permit modification on its website.

The public participation period closed at 12:00 a.m. (midnight) on November 22, 2019. Prior to finalizing a decision, DEQ hosted another meeting on February 5, 2020 to better understand and fully vet some comments received during the public participation period, which clarified outstanding questions and concerns. All comments received during the public participation period have been addressed by the DEQ and are included in the enclosed document. The DEQ wishes to express thanks to those individuals who participated in the public comment process.

Based on careful review of the public comments received, the DEQ has decided to modify Dominion's Yorktown Power Station Ash Landfill permit to allow the incorporation of the EPA CCR Rule requirements. No revisions were made to the proposed modified permit based on the comments. The modified permit will be posted on the DEQ's website.

Again, the DEQ would like to thank you for participating in the public comment process. If you have any questions, please do not hesitate to contact me at (757) 518-2174 or Melinda.Woodruff@deq.virginia.gov.

Sincerely,

Melinda Woodruff
Land Protection Manager
DEQ - Tidewater Regional Office

Attachment

cc: Daniel McGrath, P.E. Golder Associates
Kathryn Perszyk, Solid Waste Permit Coordinator, DEQ-CO
Geoff Christe, Groundwater Permit Coordinator, DEQ-CO
Commentors:
Amanda Batten, **Delegate-elect for York County** (96th House District)
Michael P. Mullin, **Delegate for Williamsburg, JCC, York, NN** (93rd House District)
G. William Blanchard
York River Group, Sierra Club (Tyla Matteson, Chair)
Elizabeth Wilkins
Jacques van Montfrans
Glen Besa
Randie Trestrail
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Joseph Umstead
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RESPONSE TO PUBLIC COMMENT

Virginia Electric and Power Company d/b/a Dominion Energy Virginia
Dominion Yorktown Power Station Ash Landfill
PERMIT NO. 457

This document summarizes the Department of Environmental Quality's (DEQ or Department) response to the comments received during the public comment period regarding the proposed modification of the Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion) Solid Waste Permit 457(SWP457) for the Dominion Yorktown Power Station Ash Landfill (Landfill).

The Landfill is a captive industrial landfill containing fossil fuel combustion products consisting primarily of Coal Combustion Residuals (CCR). Therefore, regulatory citations will refer to either the Virginia Solid Waste Management Regulations (VSWMR), 9VAC20-81 or the United States Environmental Protection Agency 2015 Final Rule on the Disposal of Coal Combustion Residuals, 40 CFR Part 257 Subpart D as amended (EPA CCR Rule).

The public comment period ran from October 23, 2019, to November 22, 2019. Comments received are addressed in this document. In some instances, the comments have been grouped when comments from multiple commenters were similar and in other instances, comments received are listed verbatim.

The Comments are denoted by "C#" and the Responses are denoted by "R#". Comments have been categorized and are not intended to answer each comment individually or be all inclusive.

Comments and Responses

C1: The Department should extend the public comment period and hold a public hearing.

R1. A public hearing is an opportunity for the public to submit verbal and or written comments on a proposed permitting action. A public hearing is held on the record and during the course of a hearing DEQ can only receive comment. A public hearing does not include a dialogue and does not itself present an opportunity to address questions but rather only receive comments.

DEQ did host an informational meeting related to this landfill on December 6, 2018. During this meeting, DEQ provided an overview of status and requirements regarding the landfill and staff answered questions one-on-one with interested citizens after the presentations. During this meeting, DEQ outlined that the permit would be modified in the future to incorporate the requirements of the EPA CCR Rule as proposed in this permitting action. DEQ also posted the proposed permit modification and accompanying fact sheet regarding this permit modification on its website. Additionally, DEQ met with some of the commenters to answer questions related to the landfill and the permitting action.

The request for a public hearing on this matter primarily related to an expressed desire to have a discussion regarding closure options for the landfill. As noted below, the EPA CCR Rule and the VSWMR do not contain provisions that mandate the landfill be closed by removal or that the CCR contained in the landfill be recycled. Moreover, this permitting action is an update to incorporate the provisions of the EPA CCR Rule into the existing permit. This action creates a more stringent permit by ensuring both that Dominion complies with the EPA CCR Rule through the permit requirements and where any provision overlaps between the EPA CCR Rule and the VSWMR, the more stringent of these provisions apply. The extension of a permitting decision would delay the effective date of inclusion of these requirements in the permit.

While DEQ did receive several comments, those comments, and related requests for public hearings do appear to correlate to the permitting action related to incorporating these provisions of the EPA CCR Rule. Thus, a public hearing related to these requests is not consistent with the proposed permitting action.

In light of the basis for the permitting action, basis of requests, and information outlined above, in accordance with the VSWMR, 9VAC20-81-450, the Department is not proposing to extend the public comment period to hold a hearing. As the facility continues to be subject to a solid waste permit and required to perform groundwater monitoring and post-closure care, additional opportunities for public participation will occur. For example, if a groundwater protection exceedance requiring corrective action is identified, the facility will be required to evaluate actions to address the exceedance and prior to any final decision on an action, public participation would occur. Also, pursuant to the VSWMR, at the end of the post-closure care term, prior to terminating any post-closure care, public participation would also occur.

C2: The CCR should be removed to a landfill with a composite liner system, reclaimed for beneficial use and the site should undergo "clean closure".

- "In 2000 Dominion Energy sought approval for the DEQ to excavate coal ash at the landfill to be put to beneficial uses elsewhere. This is a clear demonstration of a viable option for removing the coal ash from its current site, which is in close proximity to a major waterway of the Chesapeake Bay; the York River. If there is an option for excavating the coal combustion residuals for beneficial reuse, which it appears to have been an option at one point, then I believe that option should be fully considered and presented at a public hearing. Recycling the waste for beneficial reuse would certainly be a better alternative to caring for the toxic waste at its current site for decades to come."

- "We also note that in 2000, Dominion Energy, (Virginia Power) sought authorization from DEQ to excavate coal ash for other "beneficial uses" so the applicant has already demonstrated the feasibility of excavating and removing coal ash from this site."

- "I believe the possibility of excavating the waste for recycling and removing it from current location has not been given full consideration."

- "Recognizing that all coal ash that will be managed under 2019 legislation passed by the Virginia General Assembly (HB2786/SB1355) will be removed to landfills with geomembrane liners, if not recycled, I do not accept that the clay liner serving the Yorktown Power Station landfill is sufficient to protect groundwater from contamination. DEQ should require Dominion to assess the feasibility of relocating this coal ash to a more secure landfill, if not recycling it, to protect groundwater and surface waters from contamination."

- "Rather than issuing this cap in place landfill closure permit, DEQ should compel Dominion to… [determine] whether the coal ash should be excavated and either recycled or removed to a more suitable site with a modern landfill including a geomembrane liner."

- "In 2000, the landfill permit record reflects that Dominion Energy sought approval from DEQ to excavate coal ash disposed of at this landfill to be put to beneficial uses elsewhere. This instance demonstrates the feasibility of excavating coal ash for reuse at this site, and DEQ should reject the "cap and close" approach proposed in this permit in favor of removing the coal ash for reuse or disposal in modern lined landfills."

- "The most realistic and only long term solution for dealing with the Yorktown Power Station Landfill is to remove the coal ash and encapsulate it in a state of the art landfill site with a polymer membrane-lining ("clean closure") as mandated by current EPA standards for modem landfills; or, to recycle it in the production of concrete. These options are not being proposed as the best solution by

Dominion Energy. Instead, they have elected to "kick the can down the road" for future generations to deal with. If that's their solution to the problem, they should be mandated to monitor this site for as long as the site exists (i.e., centuries to come) and not just 30 years as stated in the closure permit."

- "Recently, changes in the coal ash law require Dominion to recycle at least 25% of the estimated 28 million tons of ash contained in the surface impoundments at sites at Chesapeake, Bremo, Possum Point, and Chesterfield. In addition to this recycling requirement, these plants will be required to move the remaining coal ash waste to new modern landfills with liners that are more effective in preventing the release of toxic pollutants. The desirability of ash for recycling is fairly site specific, but it should be fully considered as an option at the York County Landfill."

R2: The landfill is subject to the requirements of the VSWMR and the EPA CCR Rule. These provisions provide the requirements for a landfill to complete closure. Pursuant to these requirements, landfills may be capped in place where the cap meets certain technical requirements. These provisions do not contain a requirement that a landfill must be closed by removal and DEQ does not have the authority to require closure by removal where the permittee has submitted a closure plan and accompanying documentation meeting the requirements of these provisions. Moreover, even where a landfill may be closed by removal, these provisions do not require that any removed CCR be recycled.

Additionally, while General Assembly Acts of Assembly Chapter 650 & 651 (2019) do require Dominion to close by removal certain CCR units in the Chesapeake Bay Watershed, the provisions of that law do not apply to this facility and those provisions were passed as necessary to provide a legal mechanism to specifically require such action for those CCR units.

Also, it should be noted the capping of the landfill serves the purpose as identified in additional responses to comments of preventing infiltration into the landfill and protecting the disposed CCR in the landfill. The facility will be subject to continuing requirements including groundwater monitoring and in the event of an identified groundwater protection standard exceedance requiring corrective action, the facility will have to undertake actions to address the exceedance.

See also R3 on adequacy of liners and R13 on the length of the post-closure care for groundwater monitoring below.

C3: The clay liner of the landfill is inadequate.

- "This landfill, first permitted in 1985, only has a clay liner. In the recent federal case of United Solid Waste Activities Group vs. US EPA, (Aug 2018) in the federal circuit court for DC, the court held that clay liners are not adequate. The court actually stated "Clay lined units are dangerous" (p 25) with "a 9. 1 per cent chance of causing groundwater contamination at drinking water wells at a one-mile distance from the impoundment perimeter." Recognizing that all coal ash that will

be managed under 2019 legislation passed by the Virginia General Assembly (HB2786/SB1355) will be removed to landfills with geomembrane liners, if not recycled, I do not accept that the clay liner serving the Yorktown Power Station landfill is sufficient to protect groundwater from contamination."

- "The Dominion Yorktown Power Station Ash Landfill is a facility that is lined with only 6" of clay, which may slightly increase the length of time for concentrations of selected heavy metals to reach peak concentrations in groundwater based on EPA modeling studies but does NOT prevent such contamination. Furthermore, the clay lining does not meet the current EPA standards and is considered to be unlined based on modern CCR regulations."

- "The elevated heavy metals in MW-2 would indicate that the clay liner is not adequate to contain landfill leachate and that a geomembrane liner is necessary to retain leachate."

- "As early as 1994, repairs to the "central underdrain system" revealed "discontinuities in the existing soil-bentonite liner." "Further investigation revealed that the soil-bentonite liner beneath Cell Nos. 3, 4 and 5 does not consistently tie in with the soil-bentonite liner beneath the central underdrain." Although "the liner system for the leachate underdrain system was found to be intact, ' we are concerned that these historical deficiencies in the clay liner represent a continuing threat to groundwater. (Dec 12, 1994 letter from Virginia Power to Howard Freeland with DEQ)."

R3: The provisions of the Case referenced above involved a court challenge related to CCR surface impoundments and EPA's research regarding risk was based upon management of sluiced (or wet) CCR in a surface impoundment. This landfill has always been a dry ash landfill. Both the EPA CCR Rule and the VSWMR requirements for dry ash landfills do not require the retrofitting of composite liner systems or relocation to landfills with composite liner systems. Under the EPA CCR Rule, existing CCR landfills are not required to be lined at all to continue to operate and thus the presence of a liner for this landfill exceeds the current requirements. The Department believes the existing liner and leachate collection system to be functioning as evidenced by the system delivering leachate to the direct leachate discharge.

The base liner and leachate collection system consists of a six-inch clay liner (permeability $\geq 1x10^{-8}$cm/s) and then a two-foot bottom ash drainage blanket (permeability $\geq 1x10^{-3}$cm/s) directing leachate toward a six-inch diameter perforated pipe installed down the centerline of the landfill. There is a 0.4 percent slope toward the centerline pipe. The leachate is directed to a 6,000-gallon underground storage tank where it is automatically pumped to the Hampton Roads Sanitation District (HRSD) sewer system.

The December 12, 1994 letter referenced above discusses suspected deficiencies in the tie in of the liner to the central "underdrain". The central "underdrain" is a perforated pipe located on top of the clay liner and is actually a leachate collection line. The clay liner meets the requirements of the VSWMR, 9VAC20-81-130.J.2.c. Design and Construction Requirements.

Information regarding the leachate collection system may be found in R4 and the current quality of groundwater around the landfill may be found in R7, below. See also R10, R14, and R15 below.

C4: The leachate collection system may be inadequate.

- "I question the adequacy of the leachate collection system and request DEQ to disclose metrics with respect to its performance to date. I point out past erosion problems on the site that resulted in the release of coal ash from the landfill and question the impact of that incident on the leachate collection system performance."

- "The elevated heavy metals in MW-2 would indicate that the leachate collection system is failing to capture leachate"

- "This high water table may well impact the volume of water flowing into the leachate drainage system and basin. Any major variability in the volume of leachate flowing into the basin would confirm groundwater intrusion into the leachate collection system and contact with the coal ash. What monitoring is in place with respect to the volume and chemical composition of the leachate collected from this coal ash landfill? Is this leachate discharged directly into the sanitary sewer or is it transported by tanker truck to a sewage treatment plant? Is the leachate pretreated before it is discharged into a sewage treatment plant? Is the treatment plant capable of adequately treating the leachate including heavy metals?"

- At Permit Condition "I.C.S.a. I have not found any reference to leachate monitoring for this site. Is this occurring, and what is the current condition of the 6000 gal leachate holding tank?"

- "From my reading of the site monitoring data, there appear to have been several reports of heavy metal exceedences over EPA standards for groundwater, indicating failures of the containment system."

R4: The landfill has an active pretreatment significant industrial user (SIU) discharge permit (#0470) with Hampton Roads Sanitation District (HRSD). A significant industrial discharger is subject to strict standards. Dominion is a SIU because of the discharge wastewater associated with steam electric utility. HRSD is the authority of this wastewater discharge permit and can provide metrics with respect to the leachate collection system performance and flows to date. There is no pretreatment for the discharges to HRSD.

The HRSD permit requires Dominion to monitor the discharges of leachate and groundwater purge water (from well sampling) into the sewer system. Discharge flows and limitations are set forth in HRSD's Industrial Wastewater Discharge Regulation and all applicable federal and state limitations are required to be met.

Leachate is collected in perforated piping and conveys to a 6,000-gallon underground storage tank where it is automatically pumped to the HRSD sewer system. The underground storage tank and the associated pump station has a high-level alarm that would trigger in the event there was an emergency with the system (i.e. overflow, no flow, etc).

The leachate collection system is currently operating as designed in accordance with VSWMR, 9VAC20-81-210. The system is located within the groundwater monitoring network area. The facility inspects the leachate collection system monthly in accordance with the VSWMR 9VAC20-81-140.A.16, and the permit Part II.G.2 Self Inspection Program. HRSD also performs onsite inspections twice per year.

Information regarding the current quality of groundwater around the landfill may be found in R7, below.

C5: The cap in place closure plan and associated stormwater management may not adequately protect the environment.

- "Given the past erosion issues on this site that resulted in coal ash escaping the landfill and the increasing severity of rain and storm events related to climate change, I am concerned that the stormwater management on site is not adequate to prevent future failures resulting in coal ash releases contaminating ground and surface waters." "I will add my concerns about adverse effects on the Chesapeake Bay via runoff."

- "I am particularly concerned about coal combustion residuals (CCRs) being in close proximity to a major artery of the Chesapeake Bay; the York River, and its close proximity to Chisman Creek."

- "The actions taken regarding this landfill directly impact me as I live in close proximity to the landfill and my home is located directly located on the Chesapeake Bay. Any diminishment of the Chesapeake's Bay water quality directly impacts the value of my property; my ability to enjoy clean fishable swimmable water; and the protection of my personal health and the health of my family."

R5: In the past there have been incidences where ash washed out of the "open" and operating cells of the landfill. This was only problematic in "open" cells when storms exceeded the design limits for designed containment. Now that the landfill has been capped with a geomembrane, geocomposite drainage net and 2-feet of vegetated soil cover, conditions for this to happen no longer exist. The stormwater management conveyances and appurtenances that have been constructed exceed the regulatory requirements and are functioning as designed to control erosion and washouts. In accordance with the EPA CCR Rule (40CFR257.81), Run-on/Run-off controls and plans have been developed and are incorporated in operations at the landfill.

Please find the current published Run-on/Run-off Control Plan on the Dominion website. Dominion is required to publish documentation for the landfill in accordance with the EPA CCR Rule on their website at https://www.dominionenergy.com/ccr.

The majority of the precipitation falling on the landfill runs off the surface now that the landfill is capped and there is no infiltration into the landfill. Runoff, along with site stormwater, is conveyed to three sedimentation ponds located along the eastern border of the landfill. These ponds are operated under a Virginia Pollutant Discharge Elimination System (VPDES) permit (Permit No. VA0004103) issued by the Department, and discharge into a natural stream. These outfalls are subject to Federal Effluent Guideline limitations under Part 423 for the Steam Electric Power Generating Point Source Category. The landfill discharges comply with the permit limitation and therefore no impacts are occurring to affect the Chesapeake Bay water quality.

C6: Climate change and land subsidence sharply enhance the probability of this site's being compromised in the near future, and the results for our waterways, including the vital Chesapeake Bay, would be catastrophic.

R6: The facility is subject to post-closure care during which the landfill must be inspected, groundwater monitoring conducted, and the landfill maintained. Also, during the course of post-closure care, run-on and run-off controls as well as other measures will be maintained and evaluated and additional action taken if necessary. In the event that additional action is necessary, DEQ can evaluate such action and require remediation in accordance with the VSWMR.

C7. The groundwater at the site has been contaminated by the landfill. Increased groundwater monitoring should occur to determine the extent of groundwater contamination.

- "The groundwater monitoring record for this landfill includes numerous instances contaminants being detected."
- "In fact, it seems that groundwater contamination has already occurred at the site, In particular, the 2017 Groundwater Report showed a significant issue with leachate escaping the landfill and moving contaminates down gradient into the groundwater."
- "In reviewing a number of the groundwater reports for Dominion's Yorktown Power Station Coal Ash landfill (SWP-457), in particular the 2017 Annual Groundwater Report, there seem to be significant issues with leachate escaping the landfill and moving contaminates down gradient into the groundwater. Table 3 of the Golder Associates Report-suggests a problem where certain CCR Appendix III constituents like Boron, Fluoride, Sulfate, Total Dissolved Solids as well as Conductivity and Oxidation Reduction Potential show potential concerns in down gradient wells 06-B, 11R and MW-2, in particular."

- "Reviewing the CCR Appendix IV constituents in MW-2 (Table 2), there are significantly elevated levels of Arsenic, Barium. Cobalt. Fluoride, Lithium and Molybdenum which would appear to indicate that coal ash leachate is not being captured by the leachate' collection system and instead is contaminating the groundwater. "

- Recommend "Increased monitoring down gradient especially in the vicinity of MW-2 to determine how far these contaminates have migrated."

- "DEQ should disclose past monitoring data and remedial measures to address detected contamination. Expanded monitoring should be required to track any detected contamination."

R7: The purpose of the permit modification, as it pertains to groundwater monitoring, was to add the applicable groundwater monitoring requirements from the EPA CCR Rule to the previously-existing requirements of the VSWMR's industrial landfill groundwater monitoring program in the facility's permit, SWP457. The resultant Permit Module XI creates a more protective groundwater monitoring program, by incorporating requirements of both monitoring programs in the facility's permit. Further, where the two programs merged and two differing requirements were applicable, the more stringent requirement was retained in accordance with VSWMR, 9VAC20-81-810.A.7.

Regarding the current quality of groundwater around the landfill, groundwater monitoring conducted to date under the VSWMR shows some landfill constituent concentrations above background levels, but below the established groundwater protection standards (GPS). The facility is in compliance. Groundwater corrective action is not required unless detected concentrations are at or above the GPS.

Groundwater monitoring has been conducted in accordance with the EPA CCR Rule by the permittee. The results of this monitoring have been published on Dominion's website. Until this permit modification is complete, the Department does not have the proper authority to provide technical review and approval of groundwater monitoring requirements related solely to the EPA CCR Rule requirements, since those requirements are not yet incorporated into the solid waste permit. As some commenters noted, some CCR Appendix III and IV detections were reported in a 2017 Annual Report. Dominion identified GPS exceedances for Molybdenum and Cobalt (it is important to note that these detections did not represent GPS exceedances under the VSWMR groundwater monitoring program). After a site-specific hydrogeologic evaluation was conducted, those exceedances were attributed to a source other than the landfill, as documented in Alternate Source Demonstrations (ASD) (dated December 2018 and April 2019). As such, groundwater corrective action was not required by the EPA CCR Rule.

To provide an example of how the modified Permit Module XI is more protective of human health and the environment, we can consider what would happen if the recent Molybdenum and Cobalt (CCR Rule-only) GPS exceedances were to occur again. First, the GPS exceedances would be identified and reported in accordance with the permit (since the more stringent constituents and associated GPS values from the EPA CCR Rule have been incorporated). The

permittee would still have the option to conduct a hydrogeologic investigation to determine if a source other than the landfill caused the exceedance, which is allowed by both the VSWMR and the EPA CCR Rule. However, the Department would have the authority to review and approve or not approve the hydrogeologic evaluation. Dominion would not be able to self-implement the ASD unless approved by the Department.

Past monitoring data contained in Department records are available to the public. Additionally, Dominion publishes their EPA CCR Rule – required documentation for the landfill on their website at https://www.dominionenergy.com/ccr .

Please also see R4 regarding the adequacy of the leachate collection system.

C8 This site is unsuitable for a landfill because of the high water table.

- "We observe that the high water table at this site makes this site inappropriate for a landfill. Toxic coal ash and its heavy metal content should not be in proximity to groundwater in any case and especially without the added protection of a geomembrane liner in addition to the soil-bentonite liner."

- "Even more problematic are other elements of the report which appear to indicate that this is a very poor location for a landfill. First, the very high water table reflected in Table 1 may contribute to differences in hydrostatic pressure inside and outside that landfill that would contribute to the migration of contaminates to the surrounding groundwater. These landfill cells would appear to be in contact with or" very close to the groundwater table when wet weather could raise the water table."

- "The applicant, Dominion, should be directed to retain an independent hydrogeologist to undertake an independent geologic and hydrogeologic assessment of the suitability of this site for a landfill."

- "Concerns raised with regard to the suitability of this site for a landfill raised in my prior comments are only further heightened by a review of the landfill record. August 13, 1991 correspondence from Wladimir Gulevich, Director of Virginia Department of Waste Management to B.M. Marshall with Virginia Power noted that "The Part A Application states that the water table ranges from several feet to forty feet below the ground surface. It appears from the groundwater contour map, and the Near Vicinity Map, that the groundwater table in most of the eastern half of the site is less than two feet below the surface." Although Mr. Gulevich goes on to state that "development in these areas will require that the ground surface be raised in order to maintain the required five foot separation from the seasonal high groundwater," the proximity of groundwater to these landfill cells confirms the unsuitability of this site for continued use as a landfill or as a closed landfill."

R8: At the time of the referenced letter (1991), the VSWMR required a five foot separation between the bottom of the base landfill liner and the seasonal high groundwater table, for "new"

facilities. It was ultimately allowed that "existing" facilities that could not meet this requirement could continue to operate until reaching the permitted design elevation, at which time, closure would be required (Virginia Waste Management Act, §10.1-1408.1 N.). The referenced separation requirement was ultimately removed from the regulations. A review of groundwater elevation data shows that the water table may be as high as 2.2 feet below the ground surface at the landfill. However, the water table has not been in contact with the base liner or waste mass. The three foot thick base liner starts at the ground surface before any ash is filled in the landfill. Installation of the closure cap system has reduced the potential recharge of the groundwater and promotes a lower groundwater table and therefore, adequate separation of the liner from the groundwater table.

C9: "To my layman's eye, it troubles me that these highly technical [Annual Groundwater Monitoring] reports seem to obscure rather than disclose problems in plain english. If these elevated contaminates indicate a leaking landfill, then the report should say so and DEQ should be requiring Dominion to take corrective action."

R9: The format and the content of the referenced Annual Groundwater Monitoring Reports are subject to the requirements of the VSWMR at 9VAC20-81-250 E.2. With this permit modification, Annual Groundwater Monitoring Reports will now also have to meet the requirements of the EPA CCR Rule at 257.90(e). Annual Reports are reviewed by Department staff to ensure compliance with regulatory and permit requirements. Annual Reports contain details on whether or not the groundwater monitoring system identified a leak from the landfill, and if that detection resulted in a GPS exceedance, which would require corrective action. At this time, the permittee is not required to implement groundwater corrective action.

Any GPS exceedance notifications are required by the VSWMR at 9VAC20-81-250 C.3.e.(3)(a) and the EPA CCR Rule at 257.95(g). Once this permit modification is complete, the landfill will be required to notify the Department and publish on their website any time they detect a landfill constituent above the GPS. This notification must also state whether or not the facility will pursue a hydrogeologic evaluation or if they will proceed with the implementation of corrective action. Either of which is subject to the Department's review and approval.

C10: "Additionally as I read the summary Geology and Hydrogeology (Section 2) analysis in this [2017 Annual Groundwater Monitoring] report and in earlier reports, there appears to be concern that this landfill built on the "Tabb and Chuckatuck formations uncomfortably overlay the Yorktown Formation." The Tabb" and Chuckatuck Formations are made up of "unconsolidated sediment" consisting of "quartz grains and broken calcareous fossils"."

R10: The summary contained in the referenced report does not indicate a concern with the site's underlying geology. The summary identifies the upper 50 feet of geologic formations directly beneath the landfill and the relationship between those layers. An "unconformity" is a geological term that describes the contact between two formations of different ages in order to explain the reason for a break in geologic time, which is usually caused by erosion. At this site, the Yorktown Formation sediments were deposited in a marine environment. At some point later erosion occurred, which removed some of the deposited sediment. Then the Chuckatuck and Tabb Formations were deposited.

C11: "Very early in the development of this landfill, monitoring wells were paired, one shallow and one deep. At some point, almost two decades ago, the shallow wells were abandoned-the record reflects that the reason cited was that at least one of these shallow wells would go dry when there was limited rainfall. Recognizing the height of the groundwater table especially following rain events, contamination would more likely appear in these swallow wells where the groundwater at times would be in direct contact with the soil-bentonite liners. The failure to monitor the shallow groundwater is a deficiency in the monitoring plan that may well fail to measure contamination from the landfill.

R11: There is no failure to monitor the groundwater at this site. Historically, the site had some very shallow groundwater monitoring points, which did not meet the technical performance standards for solid waste landfills. Monitoring wells that have the water table within the screened interval are suitable for monitoring petroleum releases, because petroleum products can float on the top of the water table, but are not appropriate for landfill monitoring. As mentioned, these very shallow wells often went dry, which resulted in a lack of data collection for that monitoring period. Most importantly, monitoring wells should have their screened intervals completely submerged within the aquifer at all times during the year. This requirement is consistent with available EPA guidance on groundwater monitoring under its Resource Conservation and Recovery Act (RCRA) programs. Sample results obtained from wells which only partially intercept the aquifer (or have the water table within the screened interval) do not represent true aquifer conditions, instead they represent the complex precipitation/solution actions which take place along the capillary fringe zone during the rise and fall of the water table (i.e.rains or snows). Most commonly, such wells lead to inaccurate total metals sample results in the groundwater.

C12: At Permit Condition " I.F.7, requiring any expansion to meet the liner design criteria of the new CCR rule. I would suggest that the existing base should also meet that requirement or be excavated, as the same potential contamination would pertain to existing deposited material."

R12: The once proposed vertical expansion will not be built since the generating facility has been decommissioned. There is no requirement to retrofit compliant liners under existing "dry ash landfills." The potential for contamination is reduced by the installation of a closure cap that incorporates a geomembrane and geocomposite drainage net, which is considered "state of the art" technology for modern landfills.

C13: "The post-closure care requirements by the "owner or operator" of the as indicated in section XIII.B. 1 (page Xlll-1 of2) of the "SOLID WASTE FACILITY PERMIT NUMBER 457" closure permit (SWP457) are wholly inadequate. The 30 years of care stipulated in the closure permit does not begin to address the fact that the coal ash dump site will exist in perpetuity along with the associated leachates produced by the site. The following quoted information from an article entitled "Coal Ash" with the subtitle "The Toxic Threat to Our Environment and Health", link below, supports this concern. https://www.psr.org/wp-content/uploads/2018/05/coal-ash.pdf "Chemicals move at different rates through ground-water, so when contaminants leach out of coal ash disposal sites, some take longer than others to reach places where they may expose humans to risk. The EPA has conducted sophisticated modeling to

estimate how long leaching substances would take to reach their maximum concentrations in well water. " And, "the median average years until peak well water concentrations would occur" varies between a minimum of "74 years for selenium" to a maximum of "270 years for cobalt". Finally, "The comparable time periods for these materials escaping from composite-lined units are in the thousands of years." The current SWP 457 does not address the long-term effects of the 1,762,000 cubic yards of toxic waste in the disposal site. Dump site closure deadlines should be based on the EPA-related science and not on an arbitrary closure deadline of 30 years, nor left to the discretion of the appointed DEQ Director.

R13: The 30 year post-closure care period is established pursuant to the VSWMR and the EPA CCR Rule. It should be noted that the 30 year period is a minimum period and additional requirements must be satisfied by the permittee prior to termination of post-closure care and any termination of post-closure care will involve public participation prior to a final decision.

C14: "According to a recent report by the Environmental Integrity Project and the Earth Justice Organization, 91% of coal plants reporting groundwater data pursuant to Obama Era Ash Rule have contaminated groundwater from toxic pollutants that exceed federal standards. Considering this, there is a high likelihood that toxic pollutants may be released from a site that does not use the most protective technology that is available. This may be the case with the York County Landfill; and a public hearing with a full exploration and discussion of current protective technology and possibility of using a more protective technology should take place in order that ".... at a minimum, the CCR unit is closed in a manner that will . . . [c]ontrol, minimize or eliminate, to the maximum extent feasible, releases of CCR, leachate . . . to the ground or surface waters" as required under 40 CFR section 257.102(d)(1)(i)"

R14: The report referenced above is referring to surface impoundments. This facility is a dry ash landfill and has never been a surface impoundment. The closure cap design incorporates the most protective technology available to close and stabilize the site, including a geomembrane, geocomposite drainage net, and two-feet of granular soil and vegetative support cover as specified by the VSWMR and EPA CCR Rule. Please see R3 for additional information related to the liner system at the landfill.

C15: Issuing this permit is not protective of human health and the environment.

- "Under provisions of the Virginia Waste Management Board, 14:10. 1-1408. 1D, to comply with the permit, "any comments by the local government and general public have been evaluated and it has been determined that the facility poses no substantial present or potential danger to human health or the environment. " I feel that these conditions have not been met."

- "In my opinion, the determination in the closure permit that states "it has been determined that the facility poses no substantial present or potential danger to human health or the environment" is nothing more than wishful thinking, and hides the truth from the public. The mere existence of the toxic dumpsite is a blight on the local environment, and one that will likely continue leaching contaminants for as long as it exists. The most realistic and only long term

solution for dealing with the Yorktown Power Station Landfill is to remove the coal ash and encapsulate it in a state of the art landfill site with a polymer membrane-lining ("clean closure") as mandated by current EPA standards for modem landfills; or, to recycle it in the production of concrete. These options are not being proposed as the best solution by Dominion Energy. Instead, they have elected to "kick the can down the road" for future generations to deal with. If that's their solution to the problem, they should be mandated to monitor this site for as long as the site exists (i. e., centuries to come) and not just 30 years as stated in the closure permit."

- "I am concerned that the amendments to the permit are not protective of human health and the environment."

- At Permit Condition "1B.2., stating that the permittee shall comply with the permit and any provisions of RCRA Subtitle D, which requires that any waste disposal site pose "no reasonable probability of adverse effects on health or the environment". Again, this essentially unlined impoundment clearly does not meet this condition, given the expected lifespan of the aging clay liner, and the proximity to groundwater resources."

R15: As this action is a permit amendment to update existing permit requirements, and statutory and regulatory requirements related to permits being issued for new facilities are not applicable.The previously existing solid waste permit for the landfill was developed based on the VSWMR regarding industrial landfills. However, the landfill is also subject to the EPA CCR Rule. The primary purpose of this permit modification is to incorporate the EPA CCR Rule requirements into the permit, and thereby resulting in a more stringent permit.

With regard to groundwater monitoring, since the EPA CCR Rule became effective, the permittee has been complying with two separate monitoring programs- one to meet the VSWMR and the other to meet the EPA CCR Rule. Incorporating the EPA CCR Rule requirements into the permit creates a single, and more stringent, groundwater monitoring program and provides DEQ staff a mechanism to enforce the EPA CCR Rule. Above, R7 identifies how the proposed permit modification will result in a groundwater monitoring program that is more protective of human health and the environment.

Additional responses above including R2 on recycling, R4 on adequacy of the liner, and R13 on 30-years post-closure care provide additional information regarding the requirements to protect human health and the environment including the resulting permit from this amendment will include more strigent requirements than existing in the current permit.

C16: The proposed permit modification should be denied or rejected.

R16: The Department has no basis to deny the proposed permit modification for which the sole purpose is to incorporate the language from the EPA CCR Rule into the permit in accordance with Federal requirements. Denial of this permit amendment would delay in making the permit

more protective and would not affect the standards discussed in above responses related to requirements for closure.